

PROCEEDINGS
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A NEW CRAYFISH OF THE GENUS *PROCAMBARUS* FROM
ALABAMA AND FLORIDA

(DECAPODA, ASTACIDAE)

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A brief summary of the ranges of the species of the *Spiculifer* Group, of which this species is a member, was recently published by Hobbs (1951). The range of the new species while overlapping that of one of its near relatives, *Procambarus versutus* (Hagen, 1870: 51), appears to vicariate for another, *P. spiculifer* (LeConte, 1856: 401), in the headwater streams of the Choctawhatchee River. In several localities it was found in company with the former; however, the latter species which is frequently found with *P. versutus* appears to be absent in most of the tributaries of the Choctawhatchee north of the Alabama-Florida line.

Although representatives of this new form have been in my collection since 1941, an adequate series did not become available until recently. Through the kindness of Drs. R. D. Suttkus and G. H. Penn of Tulane University I have been permitted to examine the specimens in the Tulane Collection. During August, 1952, Drs. L. J. Marchand and H. T. Odum, of Gainesville, Florida, and I visited several localities in the Choctawhatchee drainage system in southern Alabama and Florida where we found this crayfish in several localities.

The first male, form I, available was given to me by Dr. Suttkus, and as a token of my appreciation of his help in adding materially to our knowledge of the crayfishes in the southeastern states I name this crayfish in his honor. I also wish to thank Drs. Marchand, Penn, and Odum for their assistance in my securing additional specimens.

Procambarus suttkusi, sp. nov.

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76BP *Diagnosis.*—Rostrum with lateral spines and without a median carina; areola broad and short (two to four times as long as broad and about 25% of entire length of carapace); two lateral spines present on each side of carapace. Male with hooks on ischiopodites of third and fourth pereopods; palm of chela of first form male not bearded but bearing a row of 8-11 tubercles along mesial margin. Postorbital ridges terminate cephalad in spines. First pleopod of first form male (figs. 1 and 5) without a shoulder on cephalic margin, and distal portion terminating in four distinct parts: Mesial process subspiculiform and directed caudad; cephalic process, directed distad, lies mesiad of central projection and distinctly shorter than latter or mesial process; caudal element consists of two somewhat widely separated parts—caudal process a corneous tooth lying caudolaterad of central projection, and the non-

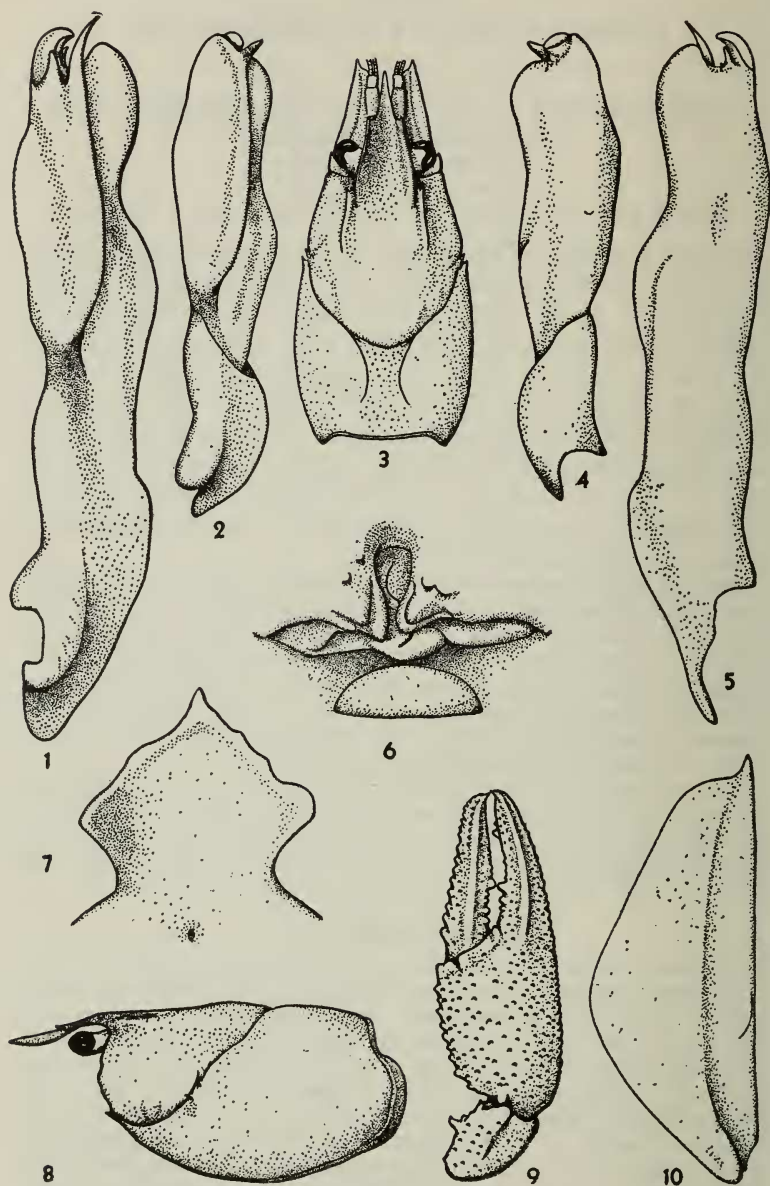


Plate IX

corneous, prominent, bulbiform caudal knob; and the central projection, the most conspicuous and cephalically situated of the terminal elements, corneous and directed caudodistad. Annulus ventralis largely hidden by multituberculate prominences extending caudad from sternum anterior to annulus (fig. 6).

Holotypic Male, Form I.—Body subcylindrical; abdomen only slightly longer than carapace (48.7-47.4 mm.). Height of carapace less than width in region of caudodorsal margin of cervical groove (22.2-23.1 mm.); greatest width of carapace a little caudad of caudodorsal margin of cervical groove (23.4 mm.).

Areola relatively broad and short; lateral limits difficult to ascertain but approximately 2.8 times as long as wide, and with six or seven punctations in narrowest part. Cephalic section of carapace about 2.9 times as long as areola (length of areola about 25% of entire length of carapace).

Rostrum moderately long, excavate; sides converging to base of acumen which is set off by acute lateral spines. Acumen longer than half the remainder of rostrum (6.9-8.7 mm.). Margins of rostrum not swollen or conspicuously elevated. Upper surface bearing numerous small setae. Subrostral ridges poorly developed and not evident in dorsal aspect.

Postorbital ridges prominent, grooved laterad, and terminating cephalad in acute spines. Suborbital angle almost obsolete, branchiostegal spine strong. Two strong acute lateral spines present on each side of carapace; upper surface of carapace punctate; lateral portion caudad of cervical groove granulate.

Cephalic section of telson with two spines in each caudolateral corner. Epistome with a small cephalomedian spine (fig. 7).

Antennules of the usual form with a strong acute spine present on ventral side of basal segment.

Antennae broken. Antennal scale (fig. 10) long, of moderate width; widest proximad of midlength; outer distal margin with a moderately strong spine.

Chela somewhat flattened with the palm slightly inflated. Hand entirely tuberculate. Inner margin of palm with a row of nine tubercles, and a row immediately below consisting of six tubercles; a prominent tubercle present on lower surface of palm at base of dactyl. Opposable margin of dactyl with 22 rounded tubercles scattered along entire length,

Explanation of Plate
Procambarus suttkusi

- Fig. 1. Mesial view of first pleopod of holotypic male, form I.
- Fig. 2. Mesial view of first pleopod of morphotypic male, form II.
- Fig. 3. Dorsal view of carapace.
- Fig. 4. Lateral view of first pleopod of morphotypic male, form II.
- Fig. 5. Lateral view of first pleopod of holotypic male, form I.
- Fig. 6. Annulus ventralis of allotype.
- Fig. 7. Epistome of holotype.
- Fig. 8. Lateral view of carapace.
- Fig. 9. Upper surface of distal three podomeres of cheliped of holotype.
- Fig. 10. Antennal scale of holotype.

the fifth from base largest; distal fourth of opposable margin with a row of four rounded tubercles below the row just mentioned; minute denticles are scattered between the tubercles of the first-mentioned row as well as between the two rows; upper surface of dactyl with a low rounded submedian longitudinal ridge, flanked laterally and mesially by tubercles on basal three-fourths and setiferous punctations on distal fourth; mesial surface with a row of 17 tubercles scattered along entire length; lower surface of dactyl similar to upper surface. Opposable margin of immovable finger with an upper row of 25 tubercles, of which the sixth from base is largest, and a lower row on distal fourth of four rounded tubercles, the basal one of which is largest; scattered between the tubercles of the first row and between the two rows are minute denticles. Upper surface of immovable finger with a ridge similar to that of the dactyl, flanked along the proximal half by tubercles and distally by punctations. Outer margin of immovable finger with tubercles extending along entire length; lower surface similar to upper.

Carpus of first right pereiopod longer than broad (13.9-9.0 mm.), with a deep submedian furrow flanked on each side by tubercles: mesially by two rows of six each, and laterally by a few scattered ones; submedian furrow interrupted distally by a prominent tubercle near distal margin of podomere. Mesial surface bears one large submedian tubercle surrounded by other small ones, and a large one on upper distal margin; lower distal margin with the usual two tubercles, and lower surface tuberculate mesially and with scattered very small tubercles laterally.

Merus of first right pereiopod with small tubercles and scattered punctations on lateral surface; upper surface with tubercles along entire length, except near distal extremity, with two of the more distal ones larger than the others; mesial surface with a few tubercles distally and somewhat excavate along middle three-fifths, the latter producing a longitudinal furrow near lower margin. Lower surface with two rows of spike-like tubercles, an outer one of eight and an inner of 12; scattered small tubercles present between and on the sides of these two rows.

Ischiopodite of first right pereiopod bears a row of three spike-like tubercles continuing from the lower mesial row on merus. Basipodite with no tubercles. Coxopodite with a cephalically projecting spine on lower cephalomesial border; caudally projecting tubercle present on caudomesial angle.

Hooks present on ischiopodites of third and fourth pereiopods; hooks on third long and slender and only slightly recurved; hooks on fourth only slightly heavier and directed somewhat cephalad. Basipodite of fourth pereiopod bears no tubercle opposing hook on ischiopodite; hooks of both third and fourth extend proximad of distal end of their respective basipodites. Coxopodites of fourth and fifth pereiopods with caudomesial projections: that on fourth heavy and inflated, and that on fifth somewhat smaller and more sharply defined.

First pleopod (figs. 1 and 5) reaches coxopodite of third pereiopod when abdomen is flexed. See description under diagnosis.

Morphotypic Male, Form II.—Differs from the holotype in the following respects: Inner margin of palm of right chela with eight tubercles; opposable margin of dactyl with only one row of tubercles (second

and fourth from base largest); mesial margin of dactyl with 16 tubercles; opposable margin of immovable finger with upper row of 13 and lower of three tubercles. Antenna extends caudad to telson. First pleopod (figs. 4 and 5) with all terminal elements present; however, none corneous and caudal process represented by a small tubercle at caudolateral base of central projection. (See Measurements.)

Allotypic Female.—Differs from the holotypic male in the following respects: height of carapace greater than width (19.6-18.9 mm.); inner margin of palm of chela with a row of seven tubercles, and row immediately below this consists of five tubercles; opposable margin of dactyl with a single row of 13 tubercles, fourth from base largest, and mesial margin with a row of 15 tubercles; opposable margin of immovable finger with a row of 11 tubercles, third from base largest, and below this row at base of distal third one large tubercle and a smaller one a little distad of the latter; lower mesial row of tubercles on merus containing 11 tubercles and the outer, eight. Antenna extends caudad to telson. The allotype has an "abnormal" (secondary sexual character of the male) hook on the ischiopodite of the third left pereopod. Annulus ventralis (fig. 6) largely obscured by two caudally projecting tuberculate prominences from sternum immediately cephalad of annulus. Portion of annulus visible tuberculate with a caudomedian depression containing a slight ridge in middle; the latter bears an S-shaped sinus. (See measurements.)

Measurements.—As follows (in millimeters):

Carapace—

	Holotype	Allotype	Morphotype
height	22.2	19.6	15.7
width	23.4	18.9	15.9
length	47.4	40.0	34.6

Areola—

length	11.9	9.7	8.3
width	4.2	2.8	2.6

Rostrum—

length	15.6	13.5	12.2
width	8.0	6.5	5.6

Right Chela—

length of inner margin of			
palm	17.4	8.0	7.2
width of palm	16.7	9.2	6.9
length of outer margin of			
hand	44.7	23.4	21.0
length of dactyl	24.1	13.1	11.6

The largest specimen available is a second form male with a carapace length of 51.0 mm., while that of the smallest first form male is 30.8 mm.

Type Locality.—Tributary of Claybank Creek, 2.0 miles west of Ozark, Dale County, Alabama, on Rt. 27 [Choctawhatchee River drainage]. Dr. Suttus has furnished me with the following data. Creek 10-15 feet wide, and in the area where collections were made from six inches to two feet deep. The light brown, turbid water was flowing over a sandy and silty bottom at a rate of six cu. ft./sec. The stream flows through a wooded area and in the broader reaches of the stream were *Orontium* and

Pontederia. The collection was made about 12:45 P.M. at which time the air temperature was 80°F. and that of the water 74°.

Disposition of Types.—The holotypic male, form I (cat. no. 93730), the allotypic female (cat. no. 93731), and the morphotypic male, form II (cat. no. 93732) are deposited in the United States National Museum. Of the remaining 170 paratypes, one male, form II, six females, five juvenile males, and two juvenile females are in the U.S.N.M.; one male, form I, four males, form II, 10 females, six juvenile males, and six juvenile females are in the Tulane University Collection; and three males, form I, 14 males, form II, 25 females, 43 juvenile males, and 44 juvenile females are in my personal collection at the University of Virginia.

Specimens Examined.—*Procambarus suttkusi* has been collected from the following localities in the Choctawhatchee drainage system. ALABAMA: *Dale County*—the type locality: 2♂♂ I, 2♀♀, June 13, 1949, R.D.S. collector; 1♂ II, 2♀♀, 5♂♂ juv., 2♀♀ juv., Aug. 2, 1952, L.J.M. and H.H.H. collectors; Small creek near Camp Rucker, 1♂ II, 2♀♀, Apr. 3, 1943, L.J.M. collector; Stream near Enterprise on road to airport, 3♀♀, Mar. 25, 1943, L.J.M. collector; Cowpen Creek near Enterprise, 1♀, 1♀ juv., Mar. 28, 1943, L.J.M. collector; Stream 1.7 mi. E. of Clayhatchee, 2♀♀, May 29, 1951, R.D.S. collector; Stream 7.2 mi. N.N.W. of junction of Echo Farm Rd. and Ala. Hy. 136, 1♂ II, June 1, 1951, R.D.S. collector; Stream 0.1 mi. E. Brown's Cross Roads on Ala. Hy. 27, 1♀, 1♀ juv., June 1, 1951, R.D.S. collector. *Coffee County*—3.2 mi. E. of Enterprise on Ala. Hy. 134, 3♂♂ I, 12♂♂ II, 19♀♀, 14♂♂ juv., 21♀♀ juv., Aug. 2, 1952, L.J.M. and H.H.H. collectors. *Geneva County*—Adams Creek, 6.5 mi. S. Bellwood, 2♀♀, May 29, 1951, R.D.S. collector; Stream 5.5 mi. N. of Hartford, 2♂♂ II, 1♀, 4♂♂ juv., 5♀♀ juv., May 29, 1951, R.D.S. collector. *Pike County*—7.1 mi. S. of Perote, 1♂ II, 4♀♀, 1♂ juv., 1♀ juv., June 2, 1951, R.D.S. collector; 5.8 mi. N. of Banks, 4♂♂ juv., 2♀♀ juv., Apr. 9, 1941, H.H.H. collector. FLORIDA: *Holmes County*—8.2 mi. S.W. of Geneva on Fla. Hy. 2, 2♂♂ II, 3♀♀, 24♂♂ juv., 21♀♀ juv., Aug. 2, 1952, L.J.M. and H.H.H. collectors.

Relationships.—*Procambarus suttkusi*, a member of the Spiculifer Group, has its closest affinities with *Procambarus versutus* (Hagen) from which it may most readily be distinguished by the structure of the first pleopod of the male and the absence of spines on the basipodites of the chelipeds in both sexes. The similarity of the two species is most strikingly revealed in the tuberculate prominences of the sternum projecting caudoventrally to obscure most of the annulus ventralis.

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